SHREE RADHEY COACHING CENTER

TEST SERIES 1

CLASS 10 - SCIENCE

SCIENCE TEST 2

Time Allowed: 3 hours **Maximum Marks: 80**

Section A

1. An aqueous solution of metal nitrate P reacts with sodium bromide solution to form yellow ppt of compound Q which is used in photography. Q on exposure to sunlight undergoes decomposition reaction to form metal present in P along with reddish brown gas. Identify P &Q. Write the chemical reaction & type of chemical reaction. **[1]**
2. Oil and fat containing food items are flushed with nitrogen. Why? **[1]**
3. Name the type of reaction : Hydrogen burns in oxygen in air to form water. **[1]**
4. What is the significance of$\rightleftarrows$ or $\rightleftarrows$ in a chemical equation ? **[1]**
5. How can $CuSO_4$ be used for detecting the presence of water ? **[1]**
6. Name the chemicals used in making soda acid fire extinguisher. **[1]**
7. During the preparation of hydrogen chloride gas on a humid day, the gas is usually passed through the guard tube containing anhydrous calcium chloride. What is the role of anhydrous calcium chloride taken in the guard tube? **[1]**
8. Why alkalis like sodium hydroxide and potassium hydroxide should not be left exposed to air? **[1]**
9. Name two metals which readily burn in air. **[1]**
10. What are the constituents of an alloy called stainless steel? **[1]**
11. For the reduction of a metallic oxide, suggest a reducing agent cheaper than aluminium. **[1]**
12. What is calcination? **[1]**
13. **Assertion:** Carbon has ability to form long carbon chains. **[1]**
    Reason: Carbon has a unique property to form long straight and branched chains called catenation.

    a) Both assertion and reason are CORRECT and reason is the CORRECT explanation of the assertion.

    b) Both assertion and reason are CORRECT but, reason is NOT THE CORRECT explanation of the assertion.

    c) Assertion is CORRECT but, reason is INCORRECT.

    d) Assertion is INCORRECT but, reason is CORRECT.
14. **Assertion:** In esterification, carboxylic acid and alcohol react in the presence of acid to give ester. **[1]**
    Reason: Esterification is the reverse of saponification.

    a) Both assertion and reason are CORRECT and reason is the

    b) Both assertion and reason are CORRECT but, reason is NOT THE

CORRECT explanation of the assertion.

CORRECT explanation of the assertion.

c) Assertion is CORRECT but, reason is INCORRECT.

d) Assertion is INCORRECT but, reason is CORRECT.

15. **Assertion:** Diamond and graphite are allotropes of carbon. **[1]**
Reason: Some elements can have different structural forms while in the same physical state. These different forms are called allotropes.

a) Both assertion and reason are CORRECT and reason is the CORRECT explanation of the assertion.

b) Both assertion and reason are CORRECT but, reason is NOT THE CORRECT explanation of the assertion.

c) Assertion is CORRECT but, reason is INCORRECT.

d) Assertion is INCORRECT but, reason is CORRECT.

16. **Assertion:** Carbon has four electrons in its valence shell. **[1]**
Reason: Carbon forms covalent bonds.

a) Both assertion and reason are CORRECT and reason is the CORRECT explanation of the assertion.

b) Both assertion and reason are CORRECT but, reason is NOT THE CORRECT explanation of the assertion.

c) Assertion is CORRECT but, reason is INCORRECT.

d) Assertion is INCORRECT but, reason is CORRECT.

17. Answer the questions on the basis of the following table, Which element is the most metallic? **[1]**

1	2	13	14	15	16	17	18
H							He
A						B	
C						D	

a) H

b) C

c) B

d) D

18. Match the following with correct response. **[1]**
(1) An element belongs to group 13 and 3 period
(2) Eka silicon
(3)Atomic number 31
(4) An element constitution of chlorophyll

(A) Gallium
(B) Aluminium
(C) magnesium
(D) Germanium

a) 1-A, 2-C, 3-B, 4-D
b) 1-C, 2-B, 3-D, 4-A
c) 1-D, 2-A, 3-C, 4-B
d) 1-B, 2-D, 3-A, 4-C

19. Which of the following statement is true? **[1]**
Statement A : Electron affinity of fluorine is more than that of chlorine.
Statement B : Carbon monoxide is an acidic oxide.

a) Both the Statement A and B are true
b) Neither statement A nor statement B is true
c) Statement A is true, B is false
d) Statement B is true, A is false

20. Metallic character _____ down a group **[1]**

a) remains the same in the group
b) decreases
c) First increase then decrease
d) Increases

Section B

21. Justify with the help of an example that displacement reaction is also a redox reaction. **[3]**
22. Convey the following information in the form of chemical equation :"An aqueous solution of ferrous sulphate reacts with an aqueous solution of sodium hydroxide to form a precipitate of ferrous hydroxide and sodium sulphate remains in solution". **[3]**
23. i. State the purpose of developing pH scale. **[3]**
ii. Mention the pH range for acid and bases.
24. How would you distinguish between baking powder and washing soda by heating? **[3]**
25. What is meant by reactivity series of metals? **[3]**
26. Solid sodium chloride does not conduct electricity whereas molten sodium chloride conducts electricity. Explain. **[3]**
27. What is an homologous series? Explain with an example. **[3]**
28. How do alcohols differ structurally from alkanes? **[3]**
29. Why are the elements of group 18 called zero valent? **[3]**
30. What does each group in the Periodic Table signify? **[3]**

Section C

31. Write the formula and then balance the following equations. **[5]**
a. Butane (C_4H_{10}) + Oxygen $\rightarrow$ Carbon dioxide + Water
b. Magnesium + Silver nitrate $\rightarrow$ Magnesium nitrate + Silver
c. Lime water + Carbon dioxide $\rightarrow$ Calcium carbonate + Water
d. Sodium + Water $\rightarrow$ Sodium hydroxide + Hydrogen
e. Calcium carbonate + Water + Carbon dioxide $\rightarrow$ Calcium bicarbonate
32. How is plaster of Paris prepared ? Why is temperature control necessary during its preparation ? How does it react with water ? **[5]**
33. How is copper obtained from its ore (Cu_2S)? Write only the chemical equations. How is copper thus obtained refined? Name and explain the process alongwith a labelled diagram. **[5]**
34. i. An ore, on heating in air, give sulphur dioxide gas. Name the method in each metallurgical step, that will be required to extract this metal from its ore. **[5]**

ii. State which of the following reactions will take place or which will not, giving suitable reason for each?

a. $Zn(s) + CuSo_4(aq) \rightarrow ZnSO_4(aq) + Cu(s)$

b. $Fe(s) + ZnSO_4(aq) \rightarrow FeSO_4(aq) + Zn(s)$

35. Give an example of each of the following. **[5]**

i. A carbon compound containing two double bonds.

ii. A molecule in which central atom is linked to three other atoms.

iii. A compound containing both ionic and covalent bonds.

iv. An organic compound which is soluble in water.

v. A carbon compound which burns with a sooty flame.

36. How do the atomic sizes vary in a period? **[5]**